PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7: C12N 15/12, C07K 14/47, 14/705, 16/28,

(11) International Publication Number: **A1**

WO 00/26369

G01N 33/566

(43) International Publication Date:

11 May 2000 (11.05.00)

(21) International Application Number:

PCT/US99/25848

(22) International Filing Date:

3 November 1999 (03.11.99)

(30) Priority Data:

60/107,112 60/114,856

4 November 1998 (04,11,98) US 6 January 1999 (06.01.99)

US

(71) Applicant (for all designated States except US): CHIRON CORPORATION [US/US]; 4560 Horton Street - R440, Emeryville, CA 94608 (US).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): KHOJA, Hamiduddin [US/US]; Apartment 48K, 23592 Windsong, Aliso Viejo, CA 92656 (US). SHYMALA, Venkatakrishna [US/US]; 11430 Sun Valley Drive, Oakland, CA 94605 (US).
- (74) Agents: BORDEN, Paula, A. et al.; Bozicevic, Field & Francis LLP, Suite 200, 285 Hamilton Avenue, Palo Alto, CA 94301 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES. FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, Cl, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of

(54) Title: ISOLATED VSHK-1 RECEPTOR POLYPEPTIDES AND METHODS OF USE THEREOF

(57) Abstract

A new seven transmembrane receptor has been identified, and the amino acid and nucleotide sequence of the receptor are provided. The nucleotide sequence is useful to construct expression cassettes and vectors to produce host cells which are capable of expressing the receptor, its mutants, fragments, or fusions. Such polypeptides are useful for identifying new receptor binding agonists and antagonists.

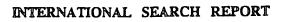
10	20	30	40	50	60		1 80	90	100	110	120
AAAAGTAGCTGGAG	TEMOUTCATT	TUATTTATA	CTCTGTACT	CANGACTOCT	CCICICIOCI	GACTACAACA	GATTOGAGCC			S T D	
130	140	150	160	176	180	190	200	316	220	230	340
ATTROCRAMATURA Y E E N E	N F G	TYDY	S O Y	E G I	C I K	E D V R	& F A	R V F	L D V P	L T I	7 77 77 CG
250	260	270	260	290	300	310	320	, 330	340	350	360
V I G L A	G N S (H V V A	I Y A	Y Y K	K C R	T K T D	TOTOTACATC	L H L	A V A D	LLL	CTATTCA L P>
370	380	390	400	410	420	430	440	450	460	2 476	480
7 L P F W	A V H	A V N G	W V L	O K 1	M C E	TAXCTTCACC	CTTOTACACA	CTANACTITO	TCTCTOGAAT	OCAOTTICTO	A CP
490	500	510	520	530	340	530	560	570	500	100	600
TCAGCATAGACAGA	TATOTOOCAO	PAACTAAAT V T X V	P S Q	OTCAGGAGTA	GENNACCA!	C W I I	CTOTTICION	OTCTOUATOR	CTOCCATCTT A A I L	CTONOCATA	P O>
610	620	620	640	650	660	670	680	690	700 4	710	720
L V F T T	V N D I	ATOCTACOTO N A R C	I P I	F F R	TACCTAGGAJ Y L O	CATCAATGAA T B H Z	AGCATTOATY A L I	CARATOCTAG	MONTOTOCAT E I C I	TOURTTOTAL	TACCCT
730	740	750	760	770	780	790	800	B10	020	\$	
TICTTATTATATO	V C Y	FTATCHCAGC F J T A	AAOOACACTN R T L	OTADAAOTAS N N N	P N I	AANTATCTCQ	ACCCCTANA P L K	OTTCTOCTCA	CACTCOTTAT	AGTITICATIO	STCACTC
850	940	870	480	890	900	910	920	930	940	6440	*40
Q L P Y H	I V K I	PCTGCGGAGG	I D 1	ATCTACTOC	CTOATCACC	S C N N	S E E	MTGGACATOG	CCATCCAMOT	CHCHGANAGC	T AP
970	940	990	1000	1010	1020	1030	1040	1050	1060	1070	1000
L F N S C	L I P	CCTTTATOT	TTTATGOOM	A S P	R H Y	TTATGAAADT V H R V	A K K	TATOGOTOCT	GONGANGACA	CHARLADAD	ronson.
1090	1100	1110	1120	1130	1140	1150	1140	1174	1180	1100	1700
AUTTICCTTITUAT	F R Q 1	TACAGAGC	AACCAOTAC	TTTAOCATT	TAMOUTAN	ACTOCYCTOC	C27710C710	GATACATATO	AATGATOCTT	TOCOCTCANA	<u> </u>
	1220	1230	1240	1750	1260	1270	1260	1290	1300	1310	
TCTOCATTATTCTO	AACTCAAAT	TCAGACOCC	OTOOTTOCA	CTTATAATA	AAGAATGOOOT	10000001100	OCCUPATA	WOCCOURT	MONOGRANICA.	AGAT <u>AATAAA</u> T	1120 POTACAA
1330 AACATGAAAATTAA	1)40	1350	1360	1370	1380	1390	1400	1410	1420	1430	1440
1450	1460	1470	1480	1490	1500	1510	1520	1930	1840	1550	
CTTATACAAATCTM					OTACCAATTI	CANTITICETO	TTTTGACAT	TATAGTATAA	TATUTANON:	TOOMACCATIC	1560 2000AAA
LS10 ACTOGOTGAAGGGT	1560	1590	1600	1610	1620	1636	1640	1650	1660	1670	1600
1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790	2CATCT 1800
AAAACAGATTATTAJ											
1919 AACTECAACTATCT	1620	1030	1840 TT/OTAAGT/	1850	1860 MATCCACCTC	1870	1880 XXATAMAA	1890	1900 **********	1910	1970
1730	1940	1950					- James Park				

INTERNATIONAL SEARCH REPORT

International Application No PCT/US 99/25848

			99/25848
A. CLASS	FICATION OF SUBJECT MATTER C12N15/12 C07K14/47 C07K14	4/705 C07K16/28 G	01N33/566
According t	o International Patent Classification (IPC) or to both national clas	sification and IPC	
B. FIELDS	SEARCHED		
Minimum de IPC 7	ocumentation searched (classification system followed by classif C12N C07K G01N	ication symbols)	
Documenta	tion searched other than minimum documentation to the extent the	nat such documents are included in the fie	elds searched
Electronic o	lata base consulted during the international search (name of dat	a base and, where practical, search terms	s used)
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the	e relevant passages	Relevant to claim No.
X	MATSUOKA ET AL: "Identification members of G-protein coupled resuperfamily expressed in boving tissue"	eceptor	1,2,4-6, 8-10, 12-20
	BIOCHEMICAL AND BIOPHYSICAL RES COMMUNICATIONS,US,ACADEMIC PRES ORLANDO, FL, vol. 194, no. 1,		
	15 July 1993 (1993-07-15), page XP002102959 ISSN: 0006-291X figure 2	es 504-511,	
Ρ,Χ	WO 99 24463 A (INCYTE PHARMA IN PREETE (US); REDDY ROOPA (US); 20 May 1999 (1999-05-20) page 17, line 1 -page 48, line	1–20	
	1	- · , · · · g · · ·	
		-/	
X Furt	her documents are listed in the continuation of box C.	X Patent family members are	listed in annex.
"A" docume	tegories of cited documents : ent defining the general state of the art which is not lered to be of particular relevance	"T" later document published after the or priority date and not in conflic cited to understand the principle	t with the application but
"E" earlier of	ocument but published on or after the international	invention "X" document of particular relevance; cannot be considered novel or c involve an inventive step when t	the claimed invention annot be considered to
which citation	is cited to establish the publication date of another n or other special reason (as specified) ent referring to an oral disclosure, use, exhibition or	"Y" document of particular relevance; cannot be considered to involve document is combined with one ments, such combination being	the claimed invention an inventive step when the or more other such docu-
"P" docume	ent published prior to the international filing date but an the priority date claimed	in the art. "&" document member of the same p	·
	actual completion of the international search	Date of mailing of the internation	al search report
	April 2000	14/04/2000	
Name and n	nailing address of the ISA European Patent Office, P.B. 5618 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,	Authorized officer	
	Fax: (+31-70) 340-3016	Kaas, V	

Form PCT/ISA/210 (second sheet) (July 1992)



International Application No PCT/US 99/25848

	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
ategory °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	EP 0 899 332 A (SMITHKLINE BEECHAM CORP) 3 March 1999 (1999-03-03) the whole document	1-20
A	O'DOWD ET AL: "A novel gene for a putative G-protein-coupled receptor with an abundant expression in brain" FEBS LETTERS, NL, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, vol. 394, 1996, pages 325-329, XP002102960 ISSN: 0014-5793 the whole document	1-20
A	WALLIN ET AL: "Properties of N-terminal tails in G-protein coupled receptors: a statistical study" PROTEIN ENGINEERING, GB, OXFORD UNIVERSITY PRESS, SURREY, vol. 8, no. 7, 1995, pages 693-698, XP002102961 ISSN: 0269-2139 the whole document	1-20
A	JACOBS ET AL: "A genetic selection for isolating cDNAs encoding secreted proteins" GENE,NL,ELSEVIER, AMSTERDAM, vol. 198, 1997, pages 289-296, XP002102962 ISSN: 0378-1119 the whole document	1-20

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No PCT/US 99/25848

Patent document cited in search repor	t	Publication date	١	Patent family member(s)	Publication date	
WO 9924463	Α	20-05-1999	US AU	5932445 A 1309599 A	03-08-1999 31-05-1999	
EP 0899332	Α	03-03-1999	CA JP	2224096 A 11056377 A	15-02-1999 02-03-1999	

Form PCT/ISA/210 (patent family annex) (July 1992)

08/21/2002, EAST Version: 1.03.0002